

**REMARKS**

Favorable consideration of this application, in light of the above amendments and the following discussion, is respectfully requested. With this Amendment, claims 2 and 9-11 have been cancelled. Claims 1, 3-8, and 12 are now pending.

Applicants appreciate the Examiner's withdrawal of the rejection of claims 1-3 under 35 U.S.C. § 112, first and second paragraphs, over the phrase "produced using a source material that will introduce phosphate ions," as noted in the Advisory Action dated June 13, 2003.

Claims 1 and 6 have been amended herein to recite  $\alpha$ -alumina particles having an aspect ratio of 55 to 2000. Support for this amendment is found in the specification at paragraph [0029]. Applicants submit that this amendment does not add any new matter. In addition, Applicants have incorporated the limitations of claims 2 and 11 into independent claims 1 and 6, respectively. Applicants submit that these amendments add no new matter. The entry of these amendments is respectfully requested.

**Rejections under 35 U.S.C. § 112, Second Paragraph**

The Examiner has rejected claims 1-3 under 35 U.S.C. § 112, second paragraph, as being indefinite, stating that the phrase "the weight of said compound used in the calculation is the weight of  $P_2O_5$ " is vague and confusing. The rejected claim language is merely a means for converting the various phosphoric compounds that may appropriately be used into a common weight--the weight of  $P_2O_5$ . Since the amount of the phosphoric compound of claims 1 and 6 is defined by weight relative to the weight of the alumina particles, the conversion allows the determination of the presence of the

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phosphoric compound in an amount of about 0.2% to about 5.0% across a spectrum of phosphoric compounds with varying weights. The specification supports this claim language in at least paragraph [0041], defining the term "phosphoric compound," to which the phrase refers, and further stating "the amount of such phosphoric compound(s) is indicated in terms of oxide, i.e., P<sub>2</sub>O<sub>5</sub>." Use of this conversion is not meant to imply that P<sub>2</sub>O<sub>5</sub> is produced by chemical reaction from the phosphoric compounds used in creating the claimed  $\alpha$ -alumina particle composition, as suggested by the Examiner in the Advisory Action of June 13, 2003. Instead, the conversion is simply a method for indicating the amount of phosphoric compound present in the claimed composition.

In support of this convention, Applicants call to the Examiner's attention Japanese Industrial Standard R 6123-1987, "Method for Chemical Analysis of Aluminous Abrasives" (see Exhibit A). Table 1 of this reference shows that the analytical amounts of the components contained in ceramics are usually indicated as oxides. As a result, the conversion of the weight of such oxides to the desired component, e.g., P<sub>2</sub>O<sub>5</sub> to the phosphoric compound of claims 1 and 6, is a process readily known to one of ordinary skill in the art.

To clarify the claims, Applicants have herein amended claims 1 and 6 to indicate that the weight of the claimed phosphoric compound is converted to the weight of P<sub>2</sub>O<sub>5</sub> when calculating its percentage relative to the alumina particles. This amendment is neither narrowing nor adds new matter and is supported by the specification in at least paragraph [0041]. With this amendment, Applicants respectfully submit that this rejection has been overcome and request its withdrawal.

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### Rejections under 35 U.S.C. § 103(a)

The Examiner rejected claims 1 and 6-10 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,587,010 to Shibasaki et al. The Examiner asserted that Shibasaki et al. teaches a process for producing alumina particles having a size of 1  $\mu\text{m}$  or less and a thickness of 0.1  $\mu\text{m}$  or less. Applicants respectfully traverse this rejection.

Under *In re Royka*, 490 F.2d 981 (CCPA 1971), to establish a *prima facie* case of obviousness, the Examiner must prove that all claim limitations of the claimed invention are taught or suggested by the prior art. See MPEP § 2143.03 (emphasis added). Independent claims 1 and 6, as amended herein, recite flaky  $\alpha$ -alumina particles having an aspect ratio of 55 to 2000 and including a phosphoric compound in an amount of about 0.2% to about 5.0% by weight relative to the weight of the alumina particles. However, Shibasaki et al. does not teach or suggest the presence of a phosphoric compound in its claimed product. As a result, Shibasaki et al. does not support a *prima facie* case of obviousness as it does not teach or suggest this claim limitation.

In addition, Shibasaki et al. neither teaches nor suggests the claimed aspect ratio, instead disclosing alumina particles having a particle size of 1.0  $\mu\text{m}$  or less and a thickness of 0.1  $\mu\text{m}$  or less (see col. 3, ln. 21-23 and claim 1). Moreover, Examples 1 and 2 of Shibasaki et al. note that both particle size and thickness share the same proportional relationship to temperature and pressure changes during production. Example 3 of Shibasaki et al. further states that the produced alumina powder has a uniform particle diameter of a little less than about 1.0  $\mu\text{m}$  and a thickness of about 0.1

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µm, yielding an aspect ratio of about 10. Given the recited particle dimensions and the stated proportional relationship between these dimensions during production, Applicants submit that the produced  $\alpha$ -alumina particles of Shibasaki et al. will always possess an aspect ratio of about 10, and certainly would not achieve an aspect ratio of 55 to 2000 as recited in amended claims 1 and 6 of the present application. No other disclosure in Shibasaki et al. would lead one of ordinary skill in the art to believe otherwise. Therefore, Shibasaki et al. does not support a *prima facie* case of obviousness because it neither teaches nor suggests the claimed aspect ratio. As a result, because the reference does not teach or suggest either the claimed aspect ratio or the claimed presence of a phosphoric compound as recited in claims 1 and 6, Applicants respectfully request that this rejection be withdrawn.

The Examiner further rejected claims 2-3 under 35 U.S.C. § 103(a) as being obvious over Shibasaki et al. in view of U.S. Patent No. 6,197,277 to Fukuda et al. Noting that Shibasaki et al. lacks disclosure of  $P_2O_5$  and zeta-potential, the Examiner cites Fukuda et al. for these claimed attributes. Applicants have previously discussed that Shibasaki et al. does not teach or suggest flaky  $\alpha$ -alumina particles with an aspect ratio of 55 to 2000 and a phosphoric compound. Fukuda et al. does not remedy this deficiency, as it discloses an aspect ratio of only 15 to not more than 50. See abstract and claim 1. Since the combination of Shibasaki et al. and Fukuda et al. does not teach or suggest the recited aspect ratio, Applicants submit that the claims of the present invention are not rendered obvious over these references and the withdrawal of this rejection is respectfully requested.

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### Conclusion

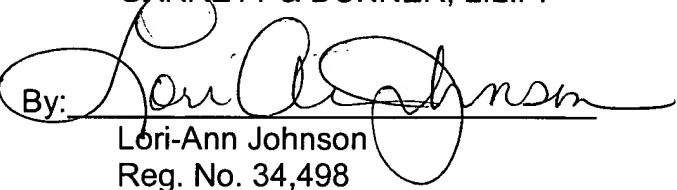
Applicants respectfully request that this Amendment be entered by the Examiner, placing claims 1, 3, 6-8, and 12 in condition for allowance. In view of the foregoing remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicants therefore request the entry of this Amendment, the Examiner's reconsideration and continued examination of the application, and the timely allowance of the pending claims.

If there is any fee due in connection with the filing of this Preliminary Amendment, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

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